BEFORE THE STATE OF WASHINGTON

ENERGY FACILITY SITE EVALUATION COUNCIL

In the Matter of Application No. 2006-01: ENERGY NORTHWEST; PACIFIC MOUNTAIN ENERGY CENTER	**EXHIBIT __** (KC-T)

APPLICANT'S PREFILED TESTIMONY

WITNESS: KATY CHANEY

Introduction

Q. Please introduce yourself to the Council.

A. My name is Katy Chaney. I am Manager of Pacific Northwest Environmental Services at URS Corporation in Seattle. URS is the international environmental and engineering consulting firm that acquired Dames & Moore in June 1999. As Manager of Pacific Northwest Environmental Services for URS, I manage environmental permitting efforts,

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environmental assessments, environmental impact statements, land use, energy and natural resource compliance evaluations, air quality, noise, planning and siting studies, and assist with land use, shoreline and construction permits. My educational and professional background is described in greater detail on my resume, which was introduced into evidence as Exhibit ___ (KC-1).

Q. What is the subject of your testimony?

A. My direct testimony is intended to address the following subjects: First, I will briefly describe URS and its experience with environmental assessments and energy facility siting proceedings. Second, I will explain URS' involvement in the Pacific Mountain Energy Center (PMEC), identify the key URS team members who performed studies for PMEC and their areas of expertise, and the role of Eric Hansen of Geomatrix in preparing the air permit. Third, I will discuss the environmental impacts expected to occur as a result of PMEC and what measures have been proposed to mitigate those impacts.

URS Corporation

Q. What sort of business is the URS Corporation?

A. URS provides general engineering and consulting, transportation, process/chemical engineering; construction services; and specialty engineering and consulting. Headquartered in San Francisco, the company operates in over 20 countries, staffed by over 30,000 employees in two divisions, the URS Division and the EG&G Division. URS specializes in facility siting investigations, environmental baseline and impact assessments, environmental studies, engineering, and applied earth sciences. URS serves federal, state and local government agencies, as well as private industry and international clients in the chemical, pharmaceutical, oil and gas, power, manufacturing, mining and forest products industries.

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Q. Describe URS' experience with power plants.

A. URS has worked on hundreds of power plant projects in the United States, providing environmental and engineering services in connection with power plant construction, licensing and operation. Our experience on power generation and related projects includes all required Federal, State and local environmental permitting, engineering design work in support of permitting and, as part of preliminary and detailed design packages, engineering/procurement of environmental control systems, power plant licensing, due diligence audits, environmental risk valuation, compliance studies, wetlands restoration, hazardous waste management and environmental impact assessments. We have worked with all types of fuels and most generation technologies, including IGCC. In addition to PMEC, URS has been responsible for the permitting of ten IGCC and gasification facilities elsewhere in the US. Our clients include the top investor-owned, municipal and cooperative utilities, along with leaders in merchant power plant development, independent power and cogeneration.

Q. What is URS' experience with EFSEC applications?

A. In June of 1999, URS acquired Dames & Moore where I was employed. In addition to the PMEC application, URS/Dames & Moore has prepared six other Energy Facility Site Evaluation Council (EFSEC) applications: (1) Application 99-1 for the Sumas Energy 2 Generation Facility; (2) Application 96-1 for the Cross Cascade Pipeline Project; (3) Application 94-1 for the Satsop Combustion Turbine Project; (4) Application 94-2 for the Chehalis Generation Facility; (5) Application 93-1 for the Cowlitz Cogeneration Project; and (6) Application 92-1 for the Trans Mountain Pipeline. We also prepared project updates and amended applications for the Sumas, Chehalis and Satsop projects. The Cross Cascade Pipeline application was withdrawn by Olympic Pipe Line, and the applicant for the Trans

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Mountain Pipeline decided not to file the application. The four power projects were approved by the Governor of the State of Washington, and the Chehalis Generation Facility is currently operating.

Q. What was your role in the previous six applications?

A. I served as URS or Dames & Moore Project Manager for all six applications and amended applications.

Q. What has been URS' involvement with the PMEC application?

A. In late 2005, Energy Northwest engaged URS to prepare the Application for Site Certification for PMEC. I will refer to Application for Site Certification simply as "the Application." The Application is on file with EFSEC and is available at its website (www.efsec.wa.gov).

The Application relates to the construction and operation of a 793-megawatt Integrated Gasification Combined Cycle (IGCC) facility on an approximately 95-acre site in the Port of Kalama's north industrial area. Using the IGCC technology, petroleum coke and coal will be gasified into syngas, used to supply two electrical generation turbines and the steam generator. Natural gas would be used for start up, back up and in times when syngas is not available.

The site is currently an open area that was used for the deposition of dredge tailings from the Columbia River. The PMEC site would include a modern, enclosed fuel handling and storage terminal.

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URS conducted field work and studies on geology and soils, vegetation, wildlife and wildlife habitat, aquatic resources, land use, socioeconomics, public services, recreation, visual resources, cultural resources, and traffic and transportation. URS also managed and/or coordinated the technical work for the Application performed by Geomatrix on air quality and noise.

Key members of the team from URS included David Every, William Kidder, Jeffrey Walker, Andrea Balla-Holden, Mark Molinari, Michael Kelly, Julie Blakeslee, Charles Manning, and myself. Resumes of the team members are provided as Exhibits ____ - _____ (KC-2 to KC-9). Eric Hansen of Geomatrix was the task leader for the preparation of the Prevention of Significant Deterioration (PSD) permit application.

Q. What changes have been made to PMEC since the Application was filed?

A. As Tom Krueger explained in his testimony, PMEC's size has increased from 600 MW to 793 MW and the air separation unit has been moved off-site. Some items that were pending at the time of the Application have now been obtained including the Certificates of Land Use Compliance from the City of Kalama and Cowlitz County, and the Port's water right approval from Ecology. A Certificate of Water Availability has been requested for PMEC from the City of Kalama. The Biological Assessment has been completed and submitted as part of the JARPA application. As David Every described in his testimony, the area of permanent wetland fill for the railroad spur is now estimated at 1.3 acres. At the time of preparing the Application, the estimated area of fill was 3.2 acres. The PSD permit application was revised and refiled with EFSEC on March 30, 2007. In response to EPA's comments, additional modeling is being performed using new emission inventories, and a second revised PSD permit application will be filed in November as a part of filing an errata

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package to the Application. Mr. Hansen's testimony addresses what changes to emissions are expected to result from the new modeling.

Q. What facilities would be included as part of PMEC?

A. PMEC includes the IGCC equipment, a new 230 kilovolt switchyard, a new approximately 5-mile, 16-inch diameter natural gas pipeline, and a railroad spur from the Burlington Northern Santa Fe (BNSF) mainline.

Q. What facilities would be provided by the Port of Kalama?

A. The PMEC property is owned by the Port of Kalama and the Port is actively developing the site for the location of an industrial facility. As part of their development actions, the Port has completed SEPA requirements, and obtained a permit to expand the existing 600-foot-long dock to add approximately 1,000 feet of dock to the north. The Port has applied for a permit from the US Army Corps of Engineers, the Washington Department of Ecology, and Cowlitz County to fill approximately 2.1 acres of wetlands located along the north edge of the PMEC site. The Port also has plans to replace the existing wastewater outfall located at North Port dock to accommodate the wastewater flow from PMEC and other tenants.

Q. Have the impacts of PMEC's use of the Port's facilities been considered in the Environmental Impact Statement or other environmental documents?

A. Yes, a Biological Assessment has been prepared for PMEC to address potential impacts to aquatic and terrestrial species from the use of the dock; a cumulative impact analysis has been prepared to consider the impact of the Port's wetland fill in conjunction with the wetland fill proposed by Energy Northwest; and the potential construction and operation impacts of the new outfall are discussed in Section 3.3 of the Draft Environmental Impact

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Statement (DEIS). The DEIS is on file with EFSEC and is available at its website (www.efsec.wa.gov). The emissions from the ships delivering feedstock to PMEC has been considered in the air quality modeling in Section 5.1 of the Application.

Q. Who will construct, own and operate the electrical transmission line?

A. An approximately 12-mile transmission line would be constructed and owned by Bonneville Power Administration (BPA) and/or Cowlitz County Public Utility District (PUD) from the site. The route would extend north to transmit the power to the BPA electrical grid. The line would be located within existing BPA and/or PUD right-of-way (ROW) and has not been designed yet. To the extent the potential impacts are known, the analysis of the impacts were included in the DEIS. When designed, the transmission line would go through a separate State Environmental Policy Act (SEPA) and/or a National Environmental Policy Act (NEPA) review, separate from the EFSEC process.

Environmental Impacts

Q. Describe the environmental impacts of PMEC, leaving aside the natural gas pipeline for now.

A. The Application discusses the impacts of PMEC on all elements of the environment. The principal environmental impacts include water supply, air quality, noise, plants and animals, socioeconomics, land use, and visual impacts.

Q. What are the water supply and discharge needs for PMEC and how will these needs be met?

A. Sections 2.5, 2.8 and 3.3 of the Application address water supply and discharge issues. The Port of Kalama would supply process water to PMEC through a Ranney collector well. The

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Port's well location is immediately to the west of the PMEC site (see Figure 2.5-1 in the Application). The Ranney collector well has the ability to supply 15 million gallons per day. A water conveyance pipeline would be installed from the well location, under the rail loop track, to various PMEC facilities such as the storage tanks and water treatment plant.

Potable water would be supplied by the City of Kalama through distribution lines that have already been installed for the site.

All process wastewater would be discharged to the Columbia River. This discharge would be subject to an NPDES permit issued by EFSEC. An NPDES permit application is included in Section 5.2 of the Application as required by WAC 463-60-537. Based on comments from EFSEC and Ecology, this permit application is being revised and Energy Northwest expects to submit the revised NPDES application in October 2007. Discharge from PMEC would be sampled and tested before joining other discharges at the Port of Kalama's discharge system at the Mixing Vault for Domestic and Industrial Wastewater as shown on Figure 2.7-3 of the Application. PMEC plans to discharge approximately 1315 gpm of process wastewater. The final design of PMEC would address storage capacity, duration, and bypass (overflow) requirements.

The total PMEC sanitary wastewater discharges to the Port of Kalama plant would comprise less than approximately six percent of the total domestic wastewater flows that could be treated at that Port's facility. Figure 2.7-3 of the Application represents the existing Port of Kalama wastewater infrastructure. The Port's domestic wastewater treatment receives domestic wastewater from other industries located in the North Port area. The Port discharges treated sanitary wastewater to the Columbia River under conditions contained in National Pollutant Discharge Elimination System Permit No. WA0040843.

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Q. Does PMEC require any new water rights?

A. No, PMEC will not require any new water rights or authorizations. Energy Northwest is not requesting any new water rights or authorizations. Process water would be acquired from the Port of Kalama and potable water would be supplied by the City of Kalama. Exhibit E to the lease between Energy Northwest and the Port of Kalama obligates the Port to provide PMEC with a reliable and continuous delivery of 5,556 gallons per minute of water. (The lease is referenced in Appendix A to the Application and a complete copy is on file with EFSEC).

Process water would be supplied from the Port of Kalama from an off-site industrial source for which valid water rights are held. The Port of Kalama has been awarded water rights by the Washington State Department of Ecology (Ecology). Three separate groundwater permits allow the Port a water usage of 10,450 gallons per minute, or a total of 15,943 acre-feet per year: Ground Water Permit G2-30035, issued December 31, 2002, authorized 350 gallons per minute, or a maximum of 565 acre-feet per year; Ground Water Permit G2-30036, issued December 31, 2002, authorized 3,500 gallons per minute, or a maximum of 4,738 acre-feet per year; and Water Permit G2-30283, issued January 26, 2007, authorized 6,600 gallons per minute, or a maximum of 10,640 acre-feet per year. These water rights allow the Port to supply PMEC enough water to operate during all ambient conditions.

Energy Northwest has discussed its potable water needs with the City of Kalama, and has received verbal assurances that the City will meet PMEC's potable water supply needs. A Certificate of Water Availability has been requested from the City and a copy will be provided to EFSEC.

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Q. Does PMEC require any filling of the site, and if so, will it affect the floodplain?

A. As described in Section 2.15.5 of the Application, the PMEC site is located within the 100-year floodplain for the Kalama and Columbia rivers as currently mapped by FEMA (1974). However, this map was based on 1980 elevations and shows the flood elevation at 19 feet. The current site elevation is at 22 feet due to subsequent deposition of dredge soils. Therefore, the current elevation of the site is above the 100-year floodplain and additional mitigation measures for flooding are not planned.

Q. Please describe the back-up fuel source.

A. Natural gas will be used for startup, backup, and in times when syngas is not available. The installation and commissioning of the gasifier and associated equipment will take approximately 10-14 months longer than the combined cycle power plant. Therefore, initial power plant operations may rely solely on natural gas during the 10-14 month period of time before completion of the gasification plant.

Q. Can you summarize the air quality impacts?

A. Air quality impacts and emissions are discussed in Sections 2.11, 3.2 and 5.1 of the Application. PMEC will be fueled primarily through the creation of syngas, however the facility will also be capable of using natural gas which will be used as a startup and backup fuel source, and in times when syngas may not be available.

The PMEC facility will utilize the Best Available Control Technology (BACT) to limit air emissions and comply with all federal and state regulatory requirements. Energy Northwest proposes lower NO_x and SO_2 emissions than have been previously deemed BACT for IGCC facilities. A Selective Catalytic Reduction (SCR) system will be used to limit emissions of

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nitrogen oxides (NOx) to 3 ppm during natural gas firing (24-hour average). The proposed short-term sulfur concentrations in syngas will be 30 ppm (1-hour average).

As part of preparing the Application and the environmental review of PMEC, Energy Northwest's consultants have conducted extensive air quality modeling analysis.

Mr. Hansen's testimony discusses air quality in detail. Mr. Beatty's testimony addresses greenhouse gases.

Q. What will be the sound levels coming from PMEC?

A. Noise impacts are discussed in Section 4.1 of the Application. PMEC has been designed to minimize sound emissions and to meet the both Washington and Oregon noise standards. EFSEC rules mandate that energy facilities it permits must comply with the Washington State noise standards and also must assess the potential for impacts from low frequency noise.

PMEC is located across the Columbia River from the town of Prescott, Oregon and northeast of the former Trojan Nuclear plant. The estimated distance from the PMEC site to the Oregon side of the river is approximately 2,400 feet. Therefore, although not required, the Noise Impact Analysis also assessed the proposed facility's compliance with the Oregon noise standards. Similar to the Washington noise standards, the Oregon noise standards identify overall A-weighted sound level limits; however, also included are limits on specific octave band sound levels and on potential increases over ambient levels. Other noise impact guidelines used in the Noise Impact Analysis include the United States Environmental

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Protection Agency (EPA) guidance regarding overall sound levels and California guidelines regarding low frequency noise.

The Noise Impact Analysis determined that sound levels emitted from PMEC would comply with both Washington and Oregon A-weighted noise limits and would not result in a significant increase in the existing noise environment. A noise level limit of 70 C-weighted decibels (dBC) has been recommended in jurisdictions in the State of California, in various technical papers and in previous EFSEC documents to protect against impacts from low frequency noise. In the assessment of impacts from low frequency noise, predicted sound levels in the 31.5 hertz (Hz) octave band exceed Oregon's limit for this octave band but overall levels are lower than guidelines used in the State of California.

Several measures have been included in the noise modeling analysis in order to meet the Washington State noise regulations or to reduce noise impacts based on suggested noise impact guidelines for low frequency noise. The following measures would be included in the design:

- Increased thickness of the steel walls of the HRSG sections and inlet transition duct
- Increased thickness of the stack walls
- Installation of sound baffles in the HRSG exhaust stacks to reduce noise from the stack exits
- Building and equipment enclosures where needed to achieve the sound levels shown in Table 4.1-6 of the Application.

Q. Will the use of the site affect wetlands or wildlife habitat?

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A. The entire site is approximately 95 acres and consists of an open area that was used for the deposition of dredge tailings from the Columbia River. In addition to the Port's proposed filling of approximately 2.3 acres of wetlands, Energy Northwest is proposing to fill approximately 1.3 acres of wetland for the new railroad spur line that will be developed for the facility. As mitigation, Energy Northwest proposes to create and enhance 8 to 9 acres of wetlands to mitigate for permanent wetland impacts. Dr. Every's testimony provides additional details on the impacts to wetlands and wildlife, and the proposed mitigation.

Q. What are the socioeconomic, land use and visual impacts of PMEC?

A. (1) Socioeconomics. Socioeconomic impacts from PMEC will be positive both during construction and the operation phase of PMEC. The impacts are described in Section 4.4 of the Application. The total cost of construction is estimated to be over $1 billion. In addition to the local area procurements, which would be subject to state and local sales taxes, PMEC would be purchasing large amounts of power generation and transmission-related equipment from various domestic and foreign suppliers. State use tax would be levied on these out-of-state procurements. Together with the in-state purchases of taxable goods and services, total taxable purchases would be on the order of $867 million. The procurements would generate an estimated $65 million in sales and use taxes for state and local jurisdictions. These numbers were calculated in 2006 using the estimated cost of the plant at that time. As time passes, the total cost of construction, and the amounts generated in sales and use taxes, are expected to be higher.

During construction, the construction workforce would peak at approximately 1,400 workers over the construction period and average 400 workers over the 14 quarters. Most of the construction labor force would likely be hired from the Longview-Kelso area, the Portland-

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Vancouver metropolitan area, and the Seattle-Tacoma metropolitan area. An estimated 10 percent of the workers would be residents of Cowlitz County, and would commute on a daily basis to and from the jobsite. Total payroll costs for the PMEC construction, including fringe benefits and other labor overhead costs, are projected to be approximately $433 million, of which approximately $43 million is expected to be earned in Cowlitz County. A portion of that income would become household spending, and would benefit area businesses.

Operation of PMEC would result in a positive economic impact to Cowlitz County and the state due to increased tax revenues, employment, and local expenditures. Operation of PMEC would require 80 to 100 full-time employees working in two 12-hour shifts. The estimated gross payroll (including fringe benefits and other payroll overheads) for the operational workforce is $12.9 million, or an average annual labor cost of $162,000 per employee. This is approximately 40 percent higher than the standard industrial wage for this industry in Cowlitz County. In addition to the regular operational workforce, a temporary workforce with appropriate skills would be utilized during major maintenance or other non-routine operational work.

Sales, use and other indirect business taxes on that level of output are estimated at $4 million per year, which would accrue to state and local government jurisdictions. Employee spending from wages and salaries is estimated at around $11 million per year, assuming an average local expenditure rate of 85 percent of compensation.

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Property taxes to be assessed on PMEC and associated facilities have not been determined, but could amount to several million dollars per year in view of PMEC's projected total cost of over $1 billion.

(2) Land Use. Land use impacts are discussed in Section 4.2 of the Application. The site is located in an area designated for heavy industrial uses within the Cowlitz County Comprehensive Plan. A small portion of the pipeline would be located within the City of Kalama. Both the County and City have provided EFSEC with certificates of land use compliance, and the County's representative testified at the land use consistency hearing that PMEC is a permitted use in the Industrial zoning district. The PMEC site is located within the Port of Kalama's North Industrial area, a larger industrial area that includes other industrial uses.

(3) Visual. PMEC will be located within an industrial area that is currently undergoing a transition from open land along the Columbia River, currently used for dredge disposal, to industrial buildings. The construction will represent a change in the view from residents located to the northeast and west across the river, and to drivers along Interstate 5. A number of photo simulations are included in Section 4.2 of the Application to show the existing viewpoints, and then the simulated view of the facility. Energy Northwest is committed to retaining existing trees wherever possible to provide a landscape buffer, landscaping in the parking lots and along access roads, and the use of earth-tone colors on the facilities and emission stacks.

(4) Visible Plumes. The PMEC design includes two 6-cell and one 7-cell cooling towers. The PMEC cooling tower cells would produce water vapor clouds that vary in size depending

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on meteorology and operational factors. An analysis of potential cooling tower impacts was conducted using the Seasonal/Annual Cooling Tower Impact (SACTI, Version 11-01-90) model and meteorological data from Noveon Chemical and the results are described in Section 3.2 of the Application. These meteorological data were also used in the air quality dispersion modeling assessment for the facility. The conclusions of the modeling analysis are as follows:

- It is unlikely significant plume-induced ground-level fogging or icing would occur on nearby roads from either cooling tower.
- Due to the moist climate of the region, long condensed plumes may result during periods of elevated relative humidity. However, such condensed plumes would usually occur during conditions of already poor or obscured visibility. During daytime hours when local weather does not obscure the plume, typical condensed plume lengths would be less than 40 m and heights less than 30 m for both cooling towers.

Q. **What are the impacts of the natural gas pipeline?**

A. A new approximately 5-mile long 16-inch natural gas line will be constructed to connect with William's Northwest Pipeline Corporation's gas lateral line at or near the Deer Island meter station. This station is located at the south end of the Port of Kalama. The new pipeline would be placed primarily under the paved areas of Hendrickson Drive and Tradewinds Road. The pipeline would be constructed adjacent to one wetland and either drilled under the Kalama River riparian corridor or hung on the underside of the existing vehicular bridge. No trees are expected to be removed for the pipeline construction, nor would there be permanent loss of wildlife habitat. Installation of the pipeline will cause some temporary disturbance of habitat located within the existing pipeline right-of-way that would displace some species of small mammals, garter snakes and small birds that use the roadside habitat. These temporary

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habitat losses would be replanted with native vegetation after the construction is completed. Although the existing natural gas line has been operating safely for many years, Energy Northwest understands the safety concerns that accompany pipeline proposals. Energy Northwest will design, construct and operate the proposed natural gas pipeline in accordance with all federal and state regulations, and will exceed those regulatory requirements in many respects. See Section 2.14 of the Application for a description of the construction methodology.

Q. Does this complete your testimony?

A. Yes it does.

EXHIBIT LIST

Ex. No.	Prefiled No.	Description
	KC-1	Katy Chaney's resume.
	KC-2	David Every's resume
	KC-3	William Kidder's resume
	KC-4	Jeffrey Walker's resume
	KC-5	Andrea Balla-Holden's resume
	KC-6	Mark Molinari's resume
	KC-7	Michael Kelly's resume
	KC-8	Julie Blakeslee's resume
	KC-9	Charles Manning's resume

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